

**Amendments to the Claims**

Please cancel claims 1-341 and 343-459 without prejudice.

This listing of claims will replace all prior versions, and listings, of claims in the above-captioned application.

**Listing of Claims:**

Claims 1-341 (cancelled)

342. (original) A sensor array for detecting an analyte in a fluid, comprising:

a substrate, wherein the substrate comprises at least one cavity;

a particle positioned within the cavity, wherein the particle is configured to produce a signal upon interaction with the analyte; and

a flexible projection positioned over a portion of the cavity, wherein the flexible projection is configured to substantially inhibit displacement of the particle during use.

Claims 343-459 (cancelled)

460. (new) The sensor array of claim 342, wherein the particle comprises a receptor molecule coupled to a polymeric resin.

461. (new) The sensor array of claim 342, wherein the particle has a size ranging from about 0.05 microns to about 500 microns in diameter.

462. (new) The sensor array of claim 342, wherein the cavity is configured to substantially contain the particle.

463. (new) The sensor array of claim 342, further comprising a cover layer coupled to the substrate and a bottom layer coupled to the substrate, wherein the cover layer and the bottom layer are removable.

464. (new) The sensor array of claim 342, wherein an opening is formed in the bottom of the cavity, wherein the opening is configured such that the fluid flows through the cavity and out of the cavity through the opening during use.

465. (new) The sensor array of claim 342, further comprising a cover layer coupled to the substrate and a bottom layer coupled to the substrate, wherein the bottom layer is coupled to a bottom surface of the substrate and wherein the cover layer is removable, and wherein the cover layer and the bottom layer include openings that are substantially aligned with the cavities during use.

466. (new) The sensor array of claim 342, further comprising a cover layer coupled to the substrate and a bottom layer coupled to the substrate, wherein an opening is formed in the cover layer substantially aligned with the cavity, and wherein an opening is formed in the bottom layer substantially aligned with the cavity.

467. (new) The sensor array of claim 342, wherein the cavity is tapered such that the width of the cavity narrows in a direction from a top surface of the substrate toward a bottom surface of the substrate, and wherein a minimum width of the cavity is substantially less than a width of the particle.

468. (new) The sensor array of claim 342, wherein a width of a bottom portion of the cavity is substantially less than a width of a top portion of the cavity, and wherein the width of the bottom portion of the cavity is substantially less than a width of the particle.

469. (new) The sensor array of claim 342, further comprising a cover layer coupled to the substrate and a bottom layer coupled to the substrate, wherein the bottom layer is configured to support the particle, and wherein an opening is formed in the cover layer substantially aligned with the cavity.

470. (new) The sensor array of claim 342, further comprising a removable cover layer coupled to the substrate.

471. (new) The sensor array of claim 342, wherein the substrate comprises a plastic material.

472. (new) The sensor array of claim 342, wherein the substrate comprises a silicon wafer.

473. (new) The sensor array of claim 342, wherein the substrate comprises a dry film photoresist material.

474. (new) The sensor array of claim 342, wherein the substrate comprises a plurality of layers of a dry film photoresist material.

475. (new) The sensor array of claim 342, wherein an inner surface of the cavity is coated with a reflective material.

476. (new) The sensor array of claim 342, further comprising channels in the substrate, wherein the channels are configured to allow the fluid to flow through the channels into and away from the cavity.

477. (new) The sensor array of claim 342, further comprising a plurality of additional particles positioned within a plurality of additional cavities in the substrate.

478. (new) The sensor array of claim 342, further comprising a plurality of additional flexible projections positioned over a plurality of additional cavities in the substrate.

479. (new) The sensor array of claim 342, further comprising a cover layer coupled to the substrate, wherein the flexible projection is formed in the cover layer.

480. (new) The sensor array of claim 342, wherein the flexible projection comprises silicon nitride.

481. (new) The sensor array of claim 342, wherein the flexible projection comprises a plastic.

482. (new) The sensor array of claim 342, wherein the flexible projection is configured to retain the particle in the cavity.

483. (new) The sensor array of claim 342, wherein a top opening and a bottom opening of the cavity provides selection of the particle substantially contained in the cavity.

484. (new) The sensor array of claim 342, wherein a size of the particle is smaller than a top opening of the cavity and larger than a bottom opening of the cavity such that the particle will be substantially contained in the cavity.

485. (new) The sensor array of claim 342, wherein the particle is positioned within the cavity by using airflow to pull the particle through the flexible projection.

486. (new) The sensor array of claim 342, wherein the flexible projection comprises silicon dioxide.

487. (new) The sensory array of claim 342, further comprising a light source, wherein the flexible projection is transparent to light generated by the light source.
488. (new) The sensor array of claim 342, further comprising a cover layer coupled to the substrate and a bottom layer coupled to the substrate, wherein the cover layer and the bottom layer are transparent to light generated by a light source.
489. (new) The sensor array of claim 342, wherein the flexible projection is configured to elastically bend into the cavity in the substrate.
490. (new) The sensor array of claim 342, further comprising a mask, the mask configured to inhibit the flexible projection bending from an initial position to a position away from the cavity.
491. (new) The sensor array of claim 342, wherein the flexible projection is electrically actuated to allow insertion of the particle into the cavity.
492. (new) The sensor array of claim 342, wherein the flexible projection is configured to elastically bend into the cavity in the substrate, and wherein the flexible projection is configured to be inhibited from bending away from the cavity.